

**ABSTRACT OF THE DISCLOSURE**

A novel *Bacillus thuringiensis* strain deposited at the International Depository Authority of Health Canada in Winnipeg under accession number IDAC010201-5, its crystal gene having the sequence SEQ ID NO: 1 and crystal protein encoded by same having the sequence SEQ ID NO: 2 and uses thereof. More specifically, the present invention is concerned with a novel *Bacillus thuringiensis*, novel cry31 protoxin and toxin, nucleotide sequences encoding same and anti-cancer therapeutic applications for the toxin.